

**PREPARATION OF ALKYLAROMATIC HYDROCARBONS AND**  
**ALKYLARYL SULFONATES**

**ABSTRACT**

In a process for preparing an alkylaromatic hydrocarbon composition an olefinic hydrocarbon mixture and an aromatic compound are contacted under alkylation conditions with an aromatic alkylation catalyst selected from a homogeneous acid catalyst and heterogeneous acid catalyst comprising a molecular sieve having an X-ray diffraction pattern including d-spacing maxima at  $12.4 \pm 0.25$ ,  $6.9 \pm 0.15$ ,  $3.57 \pm 0.07$  and  $3.42 \pm 0.07$  Angstroms. The olefinic hydrocarbon mixture comprises at least 5wt% by weight of mono-olefin oligomers of the empirical formula:



wherein n is greater than or equal to 10, the mono-olefin oligomers comprising at least 20 percent by weight of olefins having at least 12 carbon atoms, and the olefins having at least 12 carbon atoms having an average of from 0.8 to 2.0  $C_1$ - $C_3$  alkyl branches per carbon chain. Sulfonation of the alkylaromatic hydrocarbon product produces an alkylaryl sulfonate mixture that exhibits advantageous properties, such as biodegradability and hard and cold water performance.